IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): A photonic network packet routing method comprising:

optically encoding destination address information attached to an optical IP packet into a time series optical bipolar code using light attributes,

propagating the optical IP packet to a routing node,

receiving the optical IP packet at the node,

discriminating the optical IP packet by estimating peak values of optical time correlations of the encoded destination address information attached to the received optical IP packet with encoded addresses,

switching to an output path for the optical IP packet based on a result of the discriminating step, and

outputting the optical IP packet labeled with prescribed address information on the output path selected by the switching step.

Claim 2 (Previously Presented): A packet routing method according to claim 1, wherein the optical encoding of the destination address information attached to the optical IP packet comprises:

dividing an optical pulse output by a pulse source into N number of chip pulses ($N \geq 2$) having a prescribed delay time therebetween, and

imparting the individual chip pulses with phase shifts of "0" or "$\pi$" relative to a light carrier phase of the chip pulses, and recombining the divided optical chip pulses.

Claim 3 (Previously Presented): A packet routing method according to claim 1, wherein the optical encoding of the destination address information attached to the optical IP packet comprises:

dividing an optical pulse output by a pulse source into N number of chip pulses ($N \geqq 2$) having a prescribed delay time therebetween,

changing normalized intensity of the individual chip pulses to "1" or "0", and

recombining the divided optical chip pulses.

Claim 4 (Previously Presented): A packet routing method according to claim 1, wherein discrimination of the optically encoded address information comprises:

sending the optical IP packet labeled with address information onto a number of arms equal to the number of address entries, and

simultaneously conducting optical correlation processing on all arms in parallel.

Claim 5 (Previously Presented): A packet routing method according to claim l, wherein discrimination of the encoded address information comprises:

subjecting optical chip pulses to matched filtering,

effecting threshold processing on a center peak value of a generated autocorrelation function, and

optically regenerating the obtained "0" or "1".

Claim 6 (Previously Presented): A packet routing method according to claim 1, further comprising:

subjecting an output of an optical decoder to time gate processing, when subjecting a center peak value of a correlation function to threshold processing, thereby cutting off a center part and eliminating side-lobes of a correlation waveform, and

conducting threshold processing.

Claim 7 (Previously Presented): A packet routing method according to claim 1, further comprising:

dividing an optical IP packet having encoded address information in two,

conducting optical correlation processing to discriminate address information from an optical code in one optical IP packet containing address information between the two divided optical IP packets,

selecting an output path based on a result of the discrimination, and

outputting the other divided optical IP packet on the selected output path.

Claim 8 (Previously Presented): A packet routing method according to claim 6, wherein the address information is discriminated by sending the one optical IP packet onto a number of arms equal to the number of output paths and simultaneously conducting optical correlation processing on all arms in parallel.

Claim 9 (Original): A packet routing method according to claim 7, wherein an optical code in the one packet is discriminated by optical correlation processing, the discriminated signal is converted to an electric signal, and a gate of a prescribed output path is opened by the electric signal.

Claim 10 (Original): A packet routing method according to claim 7, wherein an optical code in the one packet is discriminated by optical correlation processing and an optical switch of a prescribed output path is turned ON by the discriminated optical signal.

Claim 11 (Previously Presented): A packet routing method according to claim 1, further comprising:

combining the optical IP packet output on the prescribed path and a pulse signal for control adjusted to generate an optical pulse to convert the optical code, and

converting the combined signal into a prescribed optical code by cross-phase conversion.

Claims 12-21 (Cancelled).